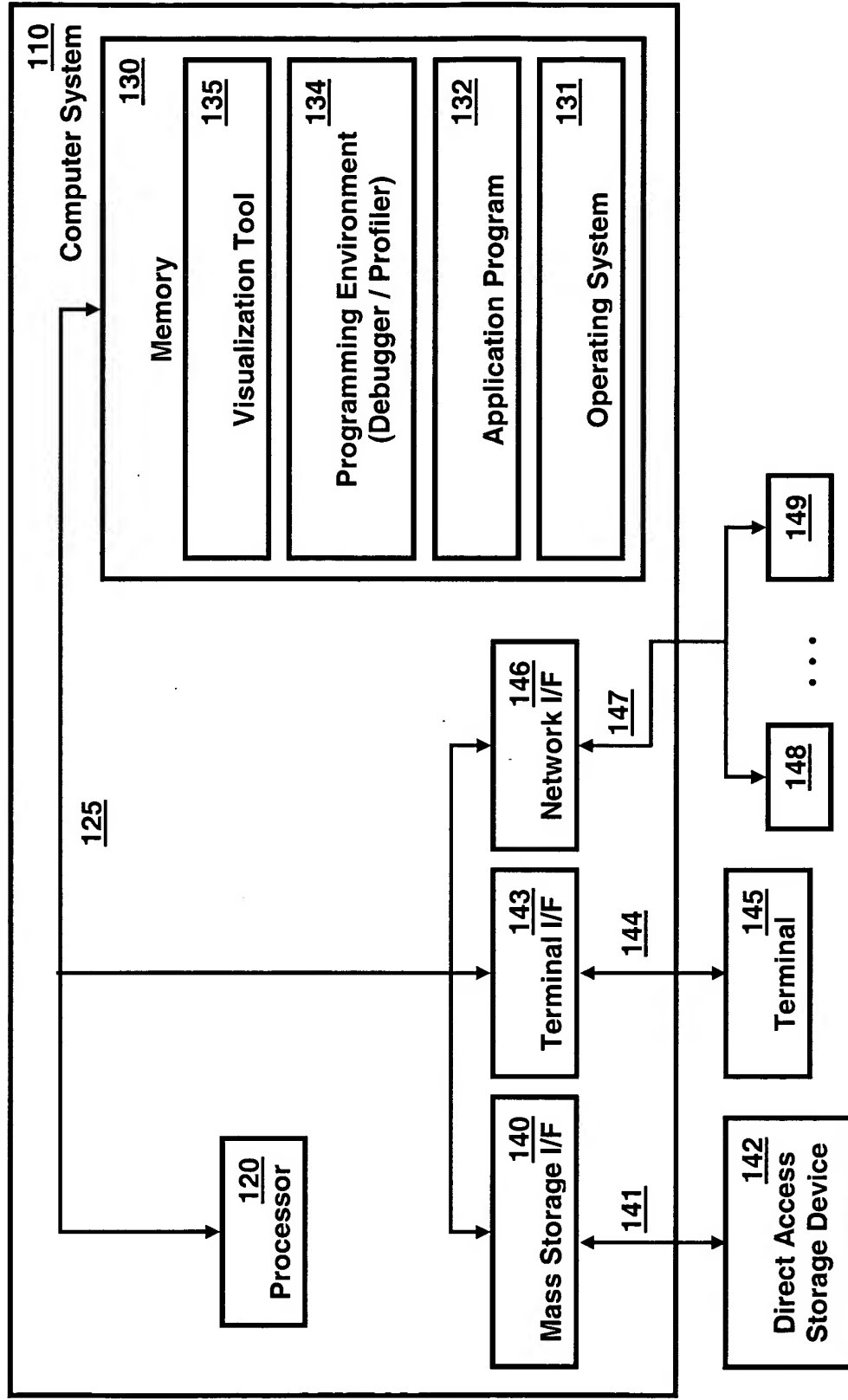


**FIG. 1**



**FIG. 2**

```

220      210
  ↘      ↓
10  public class A {           ← 232
20      public B b;
30      public D d;
40  }                           ← 234
50  public class B {
60      public C c;
70  }                           ← 236
80  public class C {
90      public D d;           ← 238
100 }                           ← 240
110 public class D {
120 }

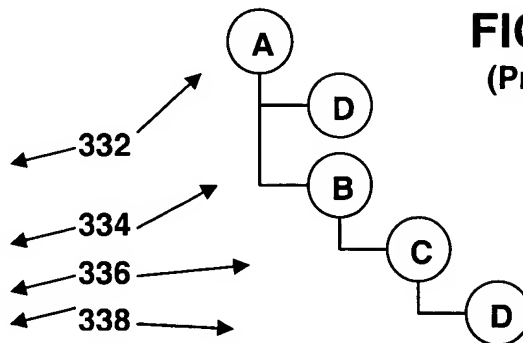
130 <entry>{
140 Foo foo = new Foo()
150 A a = foo.initializeA();   ← 244
160 B b=newB();               ← 248
170 a.b=b;
180 D wrongD = new D();
190 a.d=wrongD;
200 foo.storeCinB(b);         ← 249
210 b.c.d=new D();

220 public class Foo{
230     public Foo(){ }       ← 242
240     public A initializeA(){return new A()};
250     public void storeCinB(B b){
260         C c = new C();    ← 246
270         b.c=c;
280     }
290 }

```

**FIG. 3A (Prior Art)**

A contains  
D  
B contains  
C contains  
D



**FIG. 3B**  
(Prior Art)

**FIG. 4**

A contains (created at line 240, allocation point reachable from program entry: <entry> calls *Foo.initializeA()*).  
D (created at line 180, allocation point reachable from program entry: <entry> calls *D.<init>*).  
B contains (created at line 160, allocation point reachable from program entry: <entry> calls *B.<init>*).  
C contains (created at line 260, allocation point reachable from program entry: <entry> calls *Foo.storeCinB(B)*).  
D (created at line 210, allocation point reachable from program entry: <entry> calls *D.<init>*).  
442  
448  
444  
446  
449

**FIG. 5**

A contains (created at line 240, allocation point reachable from program entry: <entry> calls *Foo.initializeA()*).  
D (inserted into A from program entry: <entry> at line 190).  
B contains (inserted into A from program entry: entry at line 170).  
C contains (inserted into B from program entry: <entry> calls *Foo.storeCinB(B)* at line 270).  
D (inserted into C from program entry: <entry> at line 210).  
540  
551  
552  
553  
549

FIG. 6

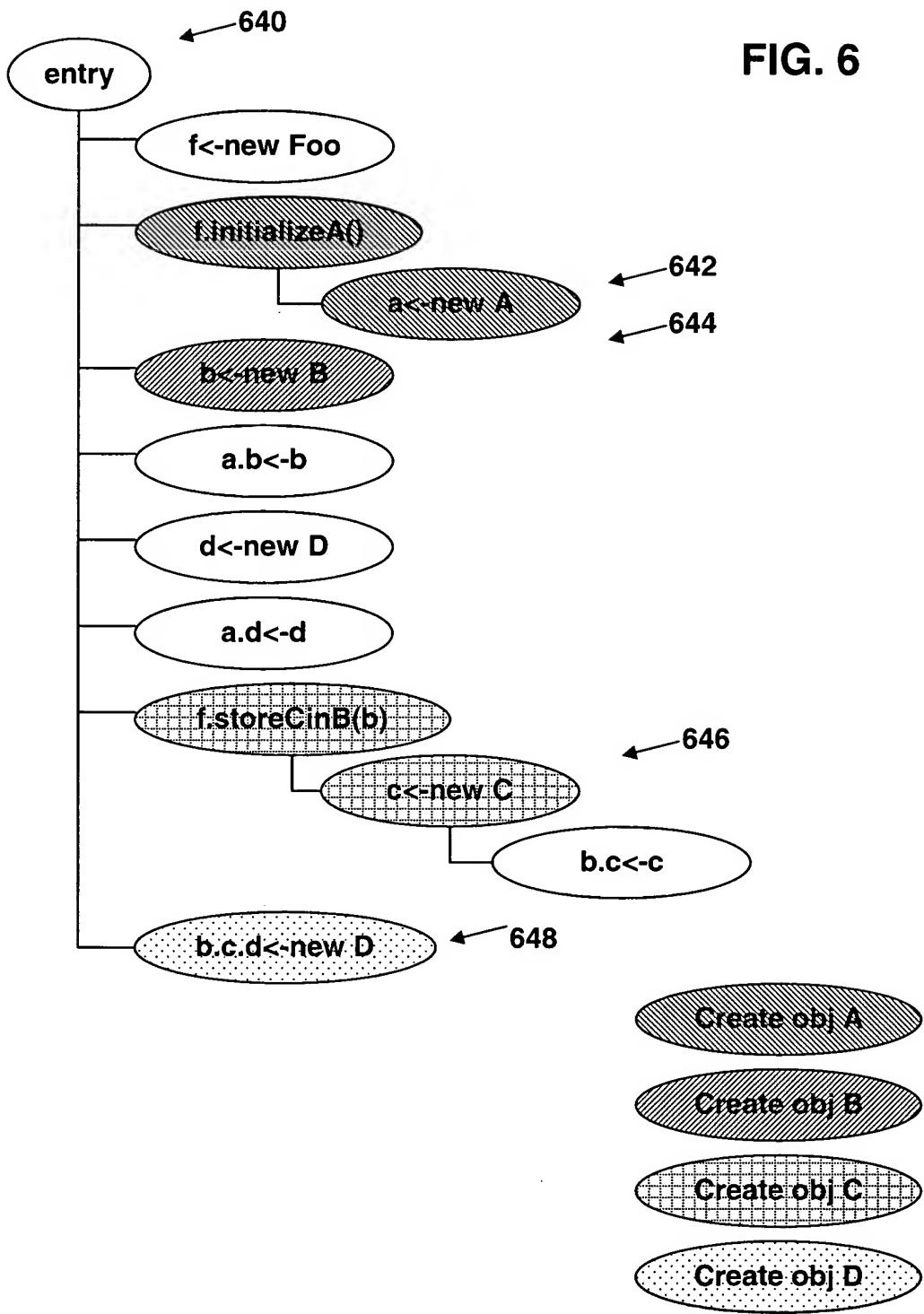
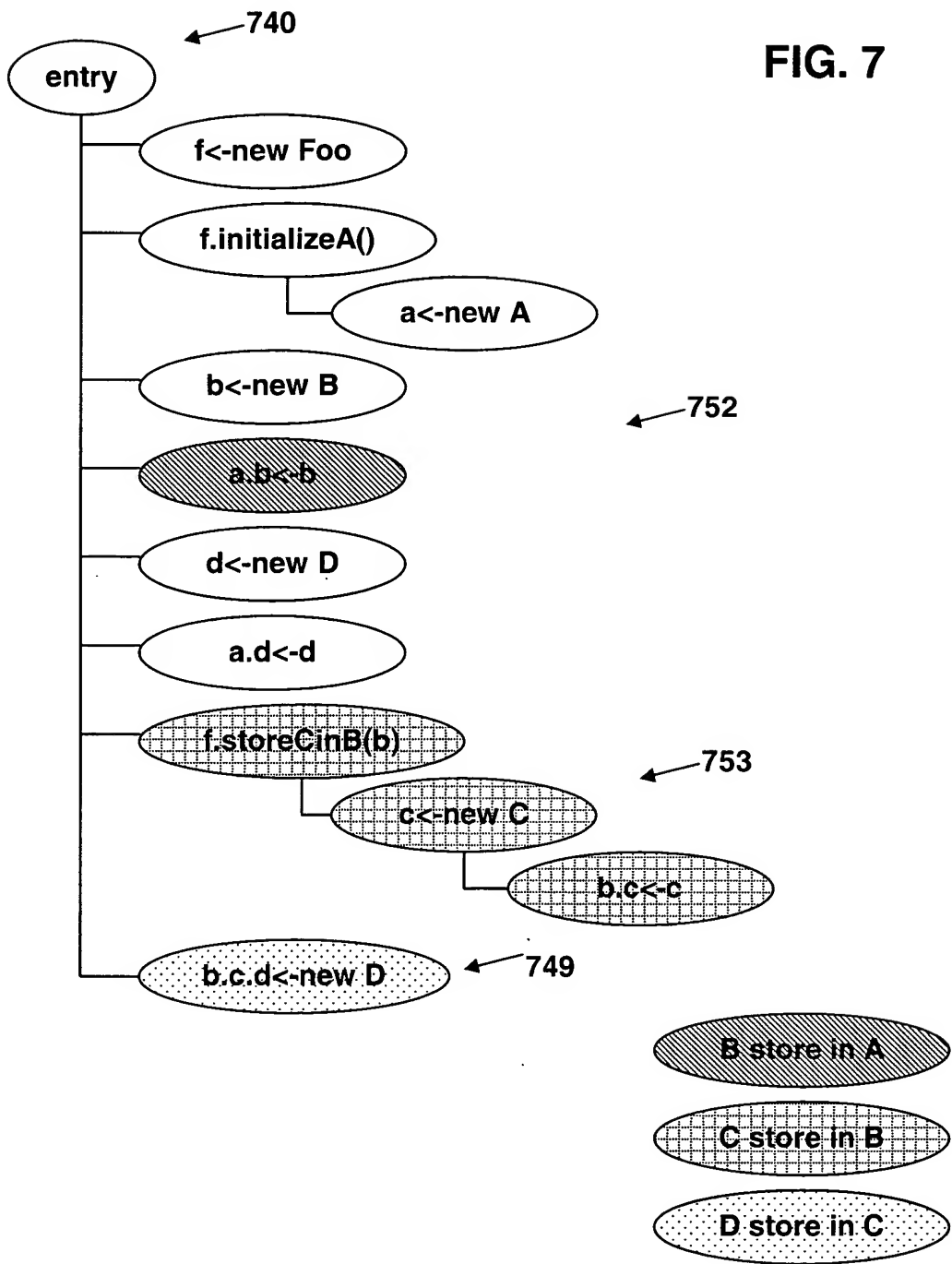
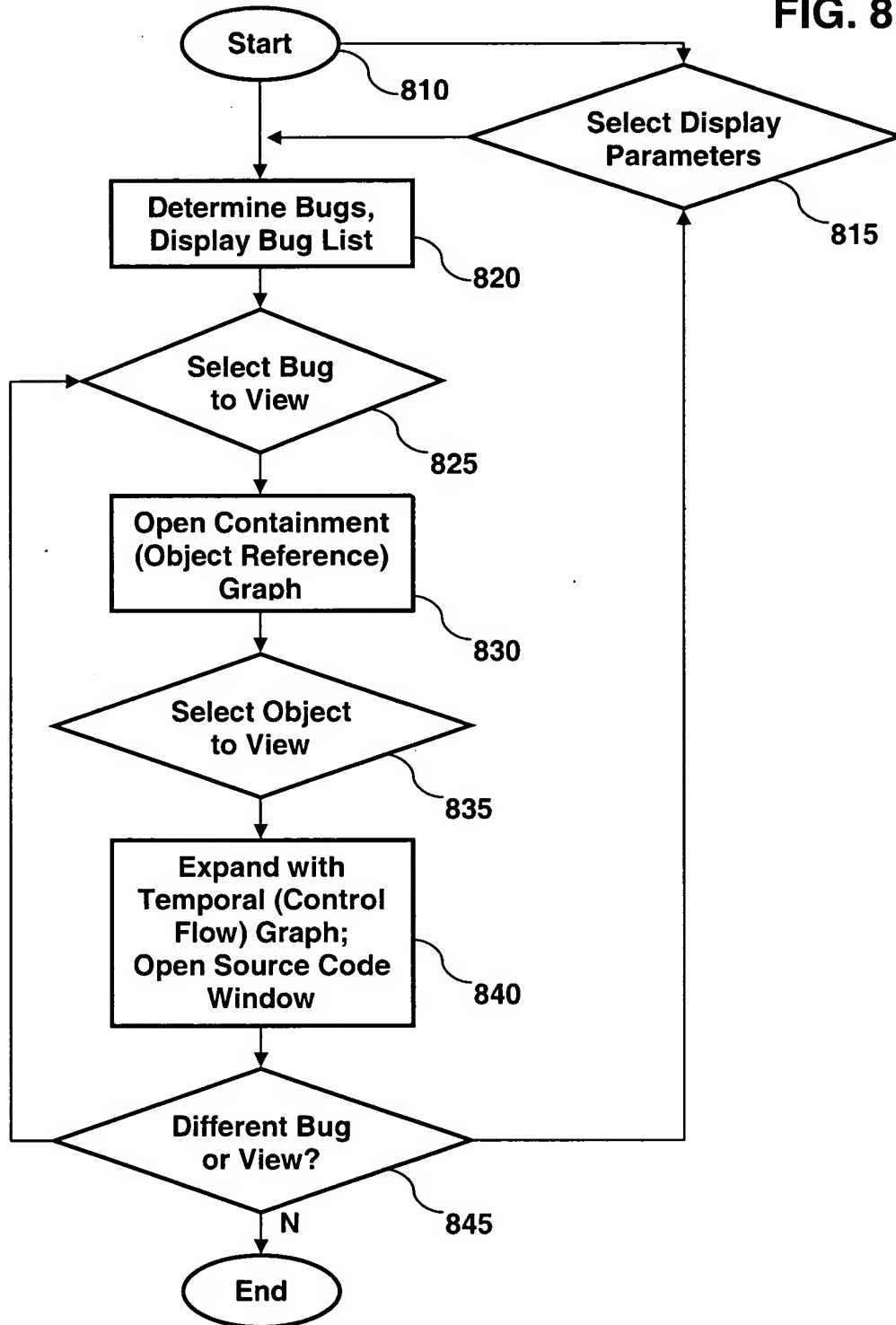


FIG. 7



**FIG. 8**



**FIG. 9**

